

Title (en)

PHOTOACOUSTIC DETECTING DEVICE FOR MEASURING A PARAMETER OF INTEREST IN A MEDIUM

Title (de)

PHOTOAKUSTISCHE ERFASSUNGSVORRICHTUNG ZUR MESSUNG EINES INTERESSIERENDEN PARAMETERS IN EINEM MEDIUM

Title (fr)

DISPOSITIF DE DÉTECTION PHOTO-ACOUSTIQUE POUR MESURER UN PARAMÈTRE D'INTÉRÊT DANS UN MILIEU

Publication

EP 4292516 A1 20231220 (EN)

Application

EP 22179491 A 20220616

Priority

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Abstract (en)

A photoacoustic detecting device (1) for measuring a parameter of interest in a medium (M) comprising:# a housing (7) formed by a baseplate (72) and a cover,# a light source (2), configured to emit a light signal,# a photoacoustic cell (9) comprising a hollow contact surface (91) intended to be in contact with the medium (M), where the light signal is able to propagate in the photoacoustic cell (9) and pass through the hollow contact surface (91) to reach the medium (M),# a guiding element (8), configured to direct the light signal toward the photoacoustic cell (9),# a transducer (3) assembled to the photoacoustic cell (9) and configured to detect a generated signal, where the generated signal is generated in the photoacoustic cell (9) by a photothermic effect in the medium (M) in response to an irradiation of the medium (M) by the light signal,# A maintaining element configured to assemble the light source (2), the transducer (3), the photoacoustic cell (9) and said guiding element (8) in a single building block,# said single building block is provided in the housing (7) such that the hollow contact surface (91) of the photoacoustic cell (9) emerges out of an aperture (721) of the baseplate (72),wherein# the single building block is freely received in the housing (7), and in that# the detecting device (1) comprises elastic components (110, 120), configured to elastically deform under the effect of a movement of the single building block relatively to the housing (7)

IPC 8 full level

A61B 5/00 (2006.01); **A61B 5/01** (2006.01)

CPC (source: EP)

A61B 5/0095 (2013.01); **A61B 5/01** (2013.01); **A61B 5/681** (2013.01); **A61B 2560/0443** (2013.01)

Citation (applicant)

EP 3885765 A1 20210929 - COMMISSARIAT ENERGIE ATOMIQUE [FR]

Citation (search report)

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- [A] US 2015182167 A1 20150702 - KIM JUNG-HO [KR], et al
- [A] US 2021302387 A1 20210930 - COUTARD JEAN-GUILLAUME [FR], et al
- [A] LIU SIYU ET AL: "Toward Wearable Healthcare: A Miniaturized 3D Imager With Coherent Frequency-Domain Photoacoustics", IEEE TRANSACTIONS ON BIOMEDICAL CIRCUITS AND SYSTEMS, IEEE, US, vol. 13, no. 6, 1 December 2019 (2019-12-01), pages 1417 - 1424, XP011763612, ISSN: 1932-4545, [retrieved on 20200101], DOI: 10.1109/TBCAS.2019.2940243

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

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DOCDB simple family (application)

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